

II. Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A sensor catheter, comprising:

a catheter having proximal and distal ends, a proximal end of the catheter adapted to be coupled to a processing unit;

a sensor assembly disposed at the distal end of the catheter; and

a plurality of wires extending from the proximal end of the catheter to the distal end of the catheter, the plurality of wires coupled to the sensor assembly,

wherein the plurality of wires are divided into at least first and second wire bundles, each of the wires in at least the first and second wire bundles twisted together such that the wires in at least the first and second wire bundles are not arranged side by side in order to reduce electromagnetic interference between the wires, and wherein the plurality of wires carry control signals transmitted to the sensor assembly and sensor signals transmitted from the sensor assembly; and

wherein at least the first and second wire bundles are twisted together and disposed within an outer conductor assembly sheath having an inner wall forming a space containing at least the first and second wire bundles of the plurality of wires.

2. (Canceled)

3. (Previously Presented) The sensor catheter of claim 1 wherein the plurality of wires further are divided into a third wire bundle, each of the wires in the third wire bundle twisted together to reduce electromagnetic interference between the wire bundles.

4. (Previously Presented) The sensor catheter of claim 1, wherein the first wire bundle consists of a pair of wires.

5. (Original) The sensor catheter of claim 4, wherein the pair of wires is twisted together in a clockwise direction.

6. (Original) The sensor catheter of claim 4, wherein the pair of wires is twisted together in a counter-clockwise direction.
7. (Previously Presented) The sensor catheter of claim 1, wherein the second wire bundle consists of a pair of wires.
8. (Previously Presented) The sensor catheter of claim 3, wherein the third bundle consists of three wires.
9. (Previously Presented) The sensor catheter of claim 3, wherein the first, second and third wire bundles are twisted together and disposed within the outer conductor assembly sheath.
10. (Original) The wiring arrangement of claim 1, wherein the wires in the first wire bundle are twisted together in a first direction and the wires in the second wire bundle are twisted together in a second, substantially opposite direction.
11. (Previously Presented) The wiring arrangement of claim 1, wherein the wires in the first wire bundle are twisted together in a first direction and the wires in the second wire bundle are twisted together in the first direction, and the first and second wire bundles are twisted together in a second direction substantially opposite to the first direction.
12. (Currently Amended) A sensor catheter, comprising:
 - a flexible elongate member having proximal and distal ends, a proximal end of the flexible elongate member adapted to be coupled to a processing unit;
 - a sensor assembly disposed at the distal end of the flexible elongate member; and
 - a plurality of wires extending from the proximal end of the flexible elongate member to the distal end of the flexible elongate member, the plurality of wires coupled to the sensor assembly,

wherein the plurality of wires are divided into first and second wire bundles, each of the wires in the first and second wire bundles twisted together such that the wires are not arranged side by side in order to reduce electromagnetic interference between wires in the first and second wire, wherein the wires of the first wire bundle are disposed within a first sheath, wherein the wires of the second wire bundle are disposed within a second sheath, and wherein the plurality of wires carry control signals transmitted to the sensor assembly and sensor signals transmitted from the sensor assembly, and

wherein the first and second sheaths ~~wire bundles~~ are twisted together and disposed within an outer conductor assembly sheath having an inner wall forming a space containing the first and second wire bundles of the plurality of wires.

13. (Canceled)

14. (Previously Presented) The sensor catheter of claim 12 wherein the plurality of wires further are divided into a third wire bundle, and each of the wires in the third wire bundle are twisted together.

15. (Original) The sensor catheter of claim 12, wherein the wires in the first wire bundle are twisted together in a clockwise direction.

16. (Original) The sensor catheter of claim 15, wherein the wires in the second wire bundles are twisted together in a counter-clockwise direction.

17. (Previously Presented) The sensor catheter of claim 12, wherein at least one of the first and second wire bundles consists of a pair of wires.

18. (Previously Presented) The sensor catheter of claim 14, wherein the third wire bundle consists of three wires.

19. (Previously Presented) The sensor catheter of claim 14, wherein the first, second and third wire bundles are twisted together and disposed within the outer conductor assembly sheath.

20. (Original) The wiring arrangement of claim 12, wherein the wires in the first wire are twisted together in a first direction and the wires in the second wire bundle are twisted together in the first direction, and the first and second wire bundles are twisted together in a second direction substantially opposite to the first direction.